

BUREAU OF TRANSPORTATION STATISTICS STRATEGIC PLAN

October, 2020

THE MISSION

The Bureau of Transportation Statistics (BTS) of the U.S. Department of Transportation (DOT) provides timely, accurate, credible information on the U.S. transportation system, the movement of people and goods, and the consequences of transportation for the economy, society and the environment.

VISION

BTS is the preeminent source of statistics on multimodal freight movement and transportation economics, and a portal to understanding the transportation system and its consequences. BTS assures the credibility of its products and services through rigorous analysis, transparent data quality, and independence from political influence. BTS promotes innovative methods of data collection, analysis, visualization, and dissemination to improve operational efficiency, to examine emerging topics, and to create relevant and timely information products that foster understanding of transportation and its transformational role in society. The Bureau's National Transportation Library (NTL) is the permanent, publicly accessible home for research publications from throughout the transportation community; the gateway to all DOT data; and the help line for the Congress, researchers, and the public for information about transportation.

WHY BTS MATTERS

Transportation is important for how it serves and affects individuals, businesses, the economy, the environment, and the nation. Statistics, maps, and their interpretation inform public and private decisions about transportation. BTS supports these decisions as a credible source of information that is free of perceived political bias.

RECENT TRANSFORMATIONS

While BTS has focused on creating a wide of useful products throughout its history, the mix of products and the method for creating products has changed significantly in recent years. BTS was established from a pre-Internet tradition of comprehensive transportation studies, reflected in the broad range of topics covered in each *Transportation Statistics Annual Report*. BTS focused on the creation of databases and tabulations to support printed reports, and depended heavily on surveys for source data. In response to evolving technology and user interests, BTS now emphasizes creation of interactive visualizations and other online data access tools to deliver statistical information in easily used modules over the Internet. Data come from a wider range of sources, and statistical products are designed to encourage ongoing analysis rather than be static reports.

Covid-19 demanded additional transformations in BTS products. Travel restrictions and warnings had enormous and immediate effects on the transportation system. BTS realized from anecdotal evidence that the speed and magnitude of change placed a premium on daily and weekly statistics rather than the Bureau's traditional focus on annual and monthly statistics. The premium on timely statistics also demanded rethinking of deliberative product development processes with careful reviews of data quality. Preliminary estimates became more important than ever, just as the stable trends that formed the traditional basis for preliminary estimates were undone. BTS responded to these challenges by tapping new data sources, by taking different approaches to preliminary estimates, and by adopting a rapid prototyping strategy for statistical product development. Examples include The Week in Transportation web page and the daily statistics reported to the Secretary and other members of the DOT senior staff. These products were launched within days of inception using sources of data that were described as rough indicators and not fully vetted, and the content evolved in response to questions and suggestions by the users of the products.

Covid-19 also demanded transformation of BTS operations from an office with liberal telework to full-time work from home. After initial adjustments, BTS was able to maintain its products and services and increase its output with the development of new products.

MAJOR OBJECTIVES

The *U.S. Department of Transportation Strategic Plan for FY 2018-2022* highlights data in general and BTS in particular as part of the Secretary's strategic objectives for a systematic approach to safety, for improved infrastructure operations and performance, and for targeted infrastructure investments to support economic competitiveness (especially for freight and rural transportation). The Secretary's strategic objectives for innovation encourage the use of data to identify and evaluate strategies and technologies. The Secretary's strategic objectives for accountability emphasize streamlining processes, improving systems, and maximizing employee performance, development, and engagement to make efficient and effective use of the Department's resources. These objectives are reinforced by the Foundations for Evidence-Based Policymaking Act (Pub.L. 115-435, Jan. 14, 2019). The ability of BTS to serve these objectives is supported by the Statistical Policy Directives of the Office of Management and Budget.

Beyond serving DOT, the Bureau's authorizing legislation in Chapter 63 of Title 49, United States Code, directs BTS to serve the entire transportation community. This community includes state and local governments, private industry, and the public, creating a diverse range of customers with differing needs. Some are power users who want access to source data to build their own statistics and create their own maps. Some are experts in aspects of transportation who need guides to information on other facets of the subject that they are now confronting. Some have only personal experience in transportation and are looking for a story to increase their understanding of the topic.

Many are looking for pre-made tables and maps to use in reports and analyses. All are looking for credible data that have adequate quality for their planned use of the data.

With the smallest budget of the principal federal statistical agencies, BTS must carefully manage resources to serve the Secretary's strategic objectives, fulfill the Bureau's legislated mandates, and meet a growing demand for transportation statistics with useful, timely, and credible products for a diverse range of customers. To achieve this balance, BTS will concentrate development of new or enhanced products in its core areas of expertise (freight, commercial aviation, and transportation economics); maintain the broad range of existing products and services that are either specifically required by law or meet customer expectations; and continue to investigate new methods of data collection, processing, analysis, quality assurance, dissemination, and preservation to enhance future products and services.

STAFF

BTS currently includes the Director, Deputy Director, 6 office directors, a public affairs director, a technical director, 2 support staff, and approximately 50 statisticians, economists, and specialists in geo-spatial data, information technology, and library science.

While BTS has extensive expertise in many forms of data collection and analysis, deep knowledge of transportation across the wide range of subjects covered by BTS is limited. BTS is developing expertise in the emerging field of data science (including big data analytics).

BTS recognizes that recent adaptations to Covid-19 will affect the workplace of the future with greater dependence on remote operations. The ability to work from distant locations should improve recruitment of new talent, but reduced face-to-face contact will require new approaches to staff development and team cohesion.

In order to enhance staff expertise and the working environment, BTS will:

- Recruit recent graduates for staff openings and through the BTS fellows program to expose BTS staff to new techniques and ideas for new products.
- Provide training, temporary assignments, and other professional development opportunities to BTS staff to cultivate skills and capabilities needed by the Bureau.
- Experiment with innovative ways to expose new and veteran staff to one another and maintain comradery during remote operations.

FINANCIAL RESOURCES

BTS depends on 2 sources of funding to support its activities:

- Contract authority: BTS activities specified in Chapter 63 of Title 49, U.S. Code, are funded as an allocation from the Federal-aid Highway Program. Unlike budget authority that must be appropriated each year, funds under contract authority are

authorized to be obligated and do not disappear at the end of the year. Current funding is \$26 million per year.

- Interagency agreements with external customers: the airline statistics program is funded through an agreement with the Federal Aviation Administration; the Confidential Close Calls Reporting Program is funded through agreements with the Washington Metropolitan Area Transit Authority and the Bureau of Safety and Environmental Enforcement of the U.S. Department of the Interior. BTS also receives funds from other agencies to support specific freight data products. Current reimbursable agreements total approximately \$10 million per year.

The Bureau's contract authority must be renewed with reauthorization of the surface transportation programs at the end of FY 2021. The reimbursable agreement with the Federal Aviation Administration is renewed annually; agreements with other customers are extended at the discretion of the customers.

BTS is authorized to sell products, and has exercised this authority only for restricted aviation data. Product sales raised approximately \$17,000 per year, indicating that the commercial market for BTS products is small. Charging for unrestricted data products is not consistent with the Open Government Data Act of 2018 or with the Bureau's longstanding philosophy of democratizing data by removing cost and other barriers to data availability.

PARTNERS AND STAKEHOLDERS

BTS is part of four communities, each with its own set of partners and stakeholders:

- The transportation community: BTS serves DOT as a source of statistical expertise and of objective information on transportation (especially from the perspective of system users rather than from suppliers of modal components); and BTS serves both DOT and the broader transportation community as a repository of research, data, and institutional knowledge through the NTL and the Bureau's activities through partners like the Transportation Research Board.
- Federal statistical agencies: BTS represents the transportation community on the Interagency Council on Statistical Policy, chaired by the Office of Management and Budget, and collaborates with individual federal statistical agencies such as the Census Bureau to meet the information needs of the transportation community.
- Federal geographic data and mapping community: BTS is the principal integrator of geographic data related to transportation and works with a variety of organizations that develop and compile geo-spatial data to establish a high-quality, comprehensive, detailed electronic map of transportation that can be used throughout government and industry.
- The knowledge management community: BTS works through the NTL with the Library of Congress, the National Library of Medicine, the National Agricultural Library, state DOT libraries, universities, and others to assure that transportation data, results of research relevant to transportation, and institutional memory are maintained and shared in forms that are readily accessible to the transportation community.

THE QUALITY CHALLENGE

BTS provides varied statistics used throughout the transportation community as a foundation for planning, performance measurement, analysis, and research. A growing emphasis in the transportation community on performance management and evidence-based decisions places special demands on timely, detailed, accurate statistics. At the same time, open data initiatives and expanded numbers of users increase opportunities to reveal problems with the quality of data behind the statistics published by BTS and its partners. Quality is rarely an absolute, single value, and the requisite degree of data quality depends on how the data are used. To remain credible and useful, BTS must be transparent about the quality of its products and their fitness of use for various applications.

While the demands for data and statistics continue to grow, methods of collection are undergoing major change. Surveys remain a major source of data, but their cost-effectiveness is declining. The widespread replacement of paper with electronic transactions in businesses, the growth of on-line shopping, the exploding use of electronic sensors for controlling everything from vehicle engines to traffic signals, extensive coverage of cell phones, and the complete coverage of publicly available aerial imagery provide new sources of data on transportation and its consequences. These new data sources often involve unexplored privacy concerns, data sharing complications, poorly documented data quality problems, and data integration challenges. BTS programs and staff expertise must evolve to overcome the problems and take advantage of the new data sources.

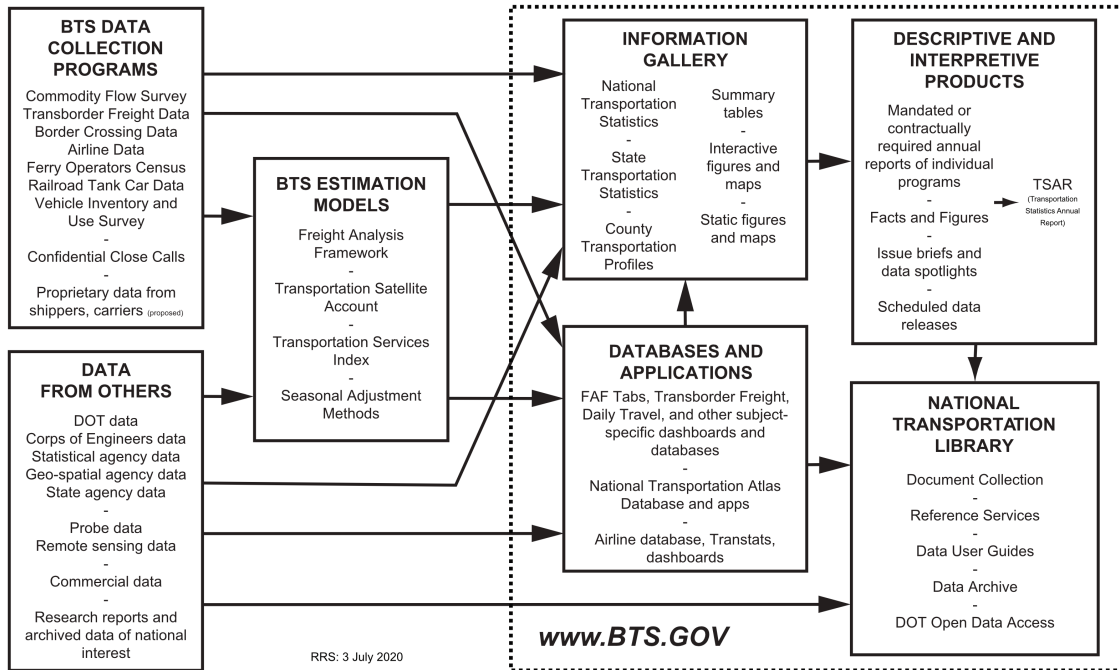
In addition to its own data collection activities, BTS compiles data and statistics from a wide range of sources. In many cases, data are collected by state and local agencies and processed by another federal agency before the results are assembled into BTS products. When BTS identifies a questionable statistic from another source, BTS must decide whether or not to publish the statistic. If BTS includes questionable numbers in its publications, the Bureau encourages the transportation community and others to use potentially erroneous information and gets the blame if someone else confirms an error. If BTS excludes questionable statistics in its publications, the Bureau can appear to be incomplete or irrelevant. The proper approach often requires BTS to work through a long supply chain of data collectors and providers to validate or correct any questionable statistics. BTS must find ways to shorten data supply chains and enhance quality without alienating its data suppliers.

SUCCESSFUL OUTCOMES

In the years ahead, BTS will be successful if it is recognized for delivering robust, credible, widely used products in each of the topic areas identified in legislative mandates and departmental goals. BTS products will be successful if they are recognized as inciteful, definitive, and objective. BTS will be a great place to work if the intellectual challenges are great, responses to the problems are creative and effective, and the Bureau's products are useful and used throughout the nation.

APPENDIX

BTS INFORMATION FLOW



This chart illustrates the inputs to BTS products listed on the following page.

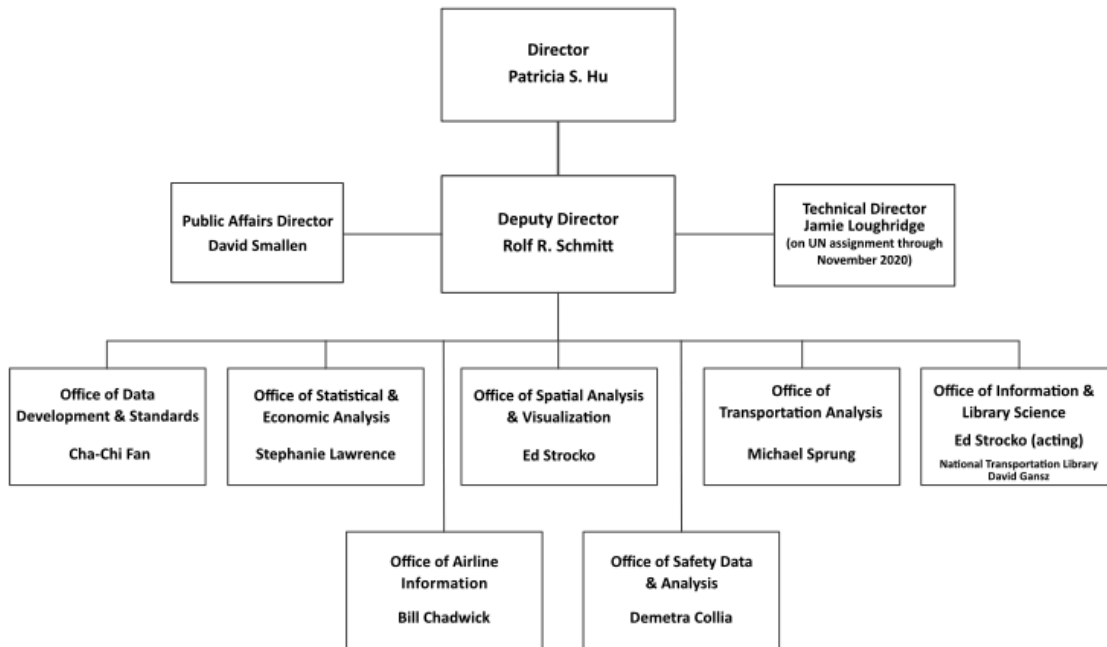
PRODUCTS

TYPE OF PRODUCT	DESCRIPTION	EXAMPLES	PRIMARY CUSTOMERS
Statistical summaries and maps in the Information Gallery	Tables, figures, and maps that are static or allow limited interaction for data selection	Monthly Transportation Statistics, The Week in Transportation, National Transportation Statistics, County Transportation Profiles	Individuals looking for specific facts and illustrations
Applications for build-your-own tables, graphics, and maps	Applications for creating tables, graphics, and maps and for extracting portions of databases	Freight Analysis Framework tabulation tool, National Transportation Atlas Viewer	Individuals who want to explore and analyze datafiles maintained by BTS and its partners
Datafiles	Downloadable files created or compiled by BTS and its partners; files stored by BTS in the NTL repository	FAF database, Transborder Freight database, National Transportation Atlas Database	Power users among planners, logisticians and other analysts, researchers, educators, students
Descriptive and interpretive reports	Context for the numbers; explanations of what the numbers mean	Transportation Statistics Annual Report, Facts and Figures series, data spotlights and scheduled releases	Congress and other policymakers; transportation planners, logisticians and other analysts; researchers; educators; media; the public
Data user guides	Explanations of data sets and variables to support understanding of how to use the statistics	Directory of Transportation data Sources; Guide to Transportation Economic Statistics	Transportation planners, logisticians and other analysts; researchers; educators; media; the public
Guidance documents	Guides to statistical standards and good statistical practice; guides for implementing open government data policies	BTS Statistical Standards Manual; Guide for Submitting Material to the NTL	Managers of transportation data programs; planners; researchers; educators
NTL document collection	Electronic collection of transportation documents, including all DOT research reports	Reports from the National Highway Traffic Safety Administration Behavioral Safety Research program	Transportation planners, logisticians and other analysts; researchers; educators; media; the public
Information searching and usage aids	Data dictionaries, acronym guides, instruction manuals	Repository and Open Science Access Portal (ROSA_P), Directory of Transportation Data Sources, DATA.GOV inventory	Transportation planners, logisticians and other analysts; researchers; educators; media; the public

SERVICES

TYPE OF SERVICE	DESCRIPTION	EXAMPLES	PRIMARY CUSTOMERS
Public information service	Answers to relatively simple questions, referrals to sources of data and expertise for more complex questions	800-853-1351; Ask a Librarian; BTS director of public affairs	Congress and other policymakers, media, public
Confidential Close Calls Reporting Program	Reimbursable service for collecting, analyzing, and protecting the confidentiality of data on close calls	Washington rail and bus transit; off-shore oil production and transport	Transportation organizations that use confidential systems to encourage proactive responses to safety problems
Statistical policy leadership	Represent transportation community needs to federal statistical and geographic data agencies; encourage collaboration and quality improvement among DOT statistical programs; BTS Director is by law senior advisor to the Secretary on data and statistics	BTS participation in Interagency Council on Statistical Policy, Federal Geographic Data Committee, DOT Geospatial Data Council; sponsorship of the Committee on National Statistics and the Transportation Research Board; participation in the American Statistical Association	Transportation statistics providers and users; federal agency partners
Statistical consulting	BTS advises DOT operating administrations on good statistical practice, performance measurement, geographic data coordination, and minimization of response burden	BTS participation in the DOT Safety Council; BTS best practices guidance; statistical reviews of DOT Information Collection Requests	DOT executive staff, DOT operating administrations
Knowledge management	Provide cataloging and other information exchange services; coordinate transportation collections among repositories; digitize historical documents	Research data archiving policies, National Transportation Knowledge Network	Librarians and archivists, logisticians and other analysts, researchers, historians

ORGANIZATION CHART



MANDATES

Congress designates the BTS Director as “the senior advisor to the Secretary [of Transportation] on data and statistics” and declares that “the Director shall not be required to obtain the approval of any other officer or employee of the Department [of Transportation] with respect to the collection or analysis of any information; or prior to publication, to obtain the approval of any other officer or employee of the United States Government with respect to the substance of any statistical technical reports or press releases lawfully prepared by the Director.” (49 USC § 6302)

Congress requires BTS to create:

- The Intermodal Transportation Database, which includes “information on the volumes and patterns of movement of goods, including local, interregional, and international movement, by all modes of transportation and intermodal combinations, and by relevant classification; information on the volumes and patterns of movement of people, including local, interregional, and international movements, by all modes of transportation (including bicycle and pedestrian modes) and intermodal combinations, and by relevant classification; information on the location and connectivity of transportation facilities and services; and a national accounting of expenditures and capital stocks on each mode of transportation and intermodal combination.” (49 USC § 6303)
- The National Transportation Atlas Database (NTAD) “comprised of geospatial databases that depict transportation networks; flows of people, goods, vehicles, and craft over the networks; and social, economic, and environmental conditions that affect or are affected by the networks.” (49 USC § 6309 with data coordination in 49 USC § 6302)

- The National Ferry Database, which contains “current information regarding ferry systems, including information regarding routes, vessels, passengers and vehicles carried, funding sources, including any Federal, State, and local government funding sources, and such other information as the Secretary considers useful.” (23 USC § 129 note)
- Information on railroad tank cars that carry flammable material. (49 USC § 20155)
- An annual report on the capacity and throughput of the largest ports by tonnage, container traffic, and dry bulk. (49 USC § 6314)
- Comprehensive information on transportation performance and impacts summarized annually in the Transportation Statistics Annual Report, including “transportation safety across all modes and intermodally; the state of good repair of United States transportation infrastructure; the extent, connectivity, and condition of the transportation system; economic efficiency across the entire transportation sector; the effects of the transportation system on global and domestic economic competitiveness; demographic, economic, and other variables influencing travel behavior, including choice of transportation mode and goods movement; transportation-related variables that influence the domestic economy and global competitiveness; economic costs and impacts for passenger travel and freight movement; intermodal and multimodal passenger movement; intermodal and multimodal freight movement; and consequences of transportation for the human and natural environment.” (49 USC § 6302, 49 USC § 6312)

Congress requires BTS to operate the National Transportation Library (NTL) to “acquire, preserve, and manage transportation information and information products and services for use by the Department, other Federal agencies, and the general public; provide reference and research assistance; serve as a central depository for research results and technical publications of the Department; provide a central clearinghouse for transportation data and information of the Federal Government; serve as coordinator and policy lead for transportation information access; provide transportation information and information products... [and] coordinate efforts ... with the goal of developing a comprehensive transportation information and knowledge network...” (49 USC § 6304)

Congress requires BTS to:

- “establish on behalf of the Secretary a program to effectively integrate safety data across modes; and to address gaps in existing safety data programs of the Department.” (49 USC § 6302)
- “continually improve surveys and data collection methods of the Department to improve the accuracy and utility of transportation statistics; encourage the standardization of data, data collection methods, and data management and storage technologies... issue guidelines for the collection of information by the Department of Transportation ... and carry out modeling, economic assessment, and program assessment activities to ensure that such information is accurate, reliable, relevant, and in a form that permits systematic analysis.” (49 USC § 6302)
- “improve the coordination of information collection efforts with other Federal agencies.” (49 USC § 6302)

As a designated principal federal statistical agency, BTS is required by the Foundations for Evidence-Based Policymaking Act (Pub. L. 115-435, Jan. 14, 2019) to “produce and disseminate relevant and timely statistical information; conduct credible and accurate statistical activities; conduct objective statistical activities; and protect the trust of information providers by ensuring the confidentiality and exclusive statistical use of their responses.” (44 USC § 3563)